
Digital Blue QX5 Computer Microscope

Installation and Quick Start Guide



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Installation and Quick Start Guide

The QX5™ microscope lets you to do many things you can't do with an ordinary microscope:

- See tiny things on your computer.
- Take the microscope off its base stand for magnified viewing.
- Combine and create new things using computer tools.
- Build a collection of your discoveries and creations.
- Produce your own movies and slide shows.

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Installation

Minimum System requirements

- ❑ PC with USB port (most computers made after June 1998 have a USB port)
- ❑ Microsoft Windows 98SE
- ❑ 200MHz processor (Special effects enhanced for Intel® Pentium® 4 processor)
- ❑ 32MB RAM
- ❑ 150 MB free hard disk space
- ❑ 4x CD-ROM drive
- ❑ SVGA 800x600 resolution video support, 16-bit colour
- ❑ 16 –bit Windows –compatible sound device
- ❑ Video and sound compatible with DirectX8 (included at install)

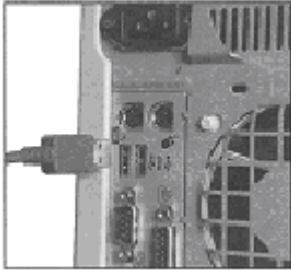
Installation

NB: do not plug in the microscope until you have installed the software.

- Insert the Digital Blue™ QX5™ Software CD-ROM
- Wait for auto play to start
- Click the install button

If auto play does not start automatically, go to the desktop and double-click on **My Computer**. Double-click the icon for the **CD-ROM/DVD drive** that contains the CD. Open the **set-up** folder, double-click on set-up.exe and follow the on screen instructions.

- Restart the computer
- Plug in the microscope to the USB port



- Launch the Digital Blue™ QX5™ Software from the Start menu
- If things go wrong:
- Unplug the microscope
 - Restart the computer
 - Repeat the setup procedure

It is advisable to close all other running applications on the computer before using the microscope and its software.

Basic Buttons



Live View Button – Go to Live View from Main to view and add samples to your collection.



Main Button – Go to main screen which allows you to edit and use your images taken with the microscope.



OK Button - Continue with the action you have selected. This button usually appears with the cancel button.



Cancel Button – Cancel the action you have selected. This usually appears when you enter special scenes such as the show-editing window or when quitting the software.



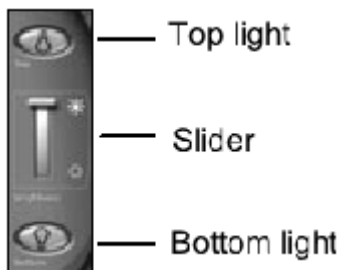
Quit Button – Quits the QX5™ software from the Main window.



Audio Help button – Pause over buttons to hear the name of the button and what it does. For additional text based help press F1.

Lighting

The microscope light turns on when you enter the Live View and turns off when you go into the Main window.



You control the lights in Live View with the Lighting Controls on the screen. Click the top bulb to use top lighting. Click the bottom bulb to shine light up through the sample platform.

Moving the slider up makes your sample look brighter. Moving it down makes your sample less bright. Experiment to find what works best with your samples.

When you remove the microscope from the base, the top light comes on automatically.

Using the correct lighting

Use the bottom light to shine up through transparent and very thin samples, like feathers, slices of vegetables, or onion skin.

The light in the detachable microscope illuminates objects that are too large or heavy to be placed on the microscopes sample platform.

You can also use the microscope on the stand to view small solid objects and living specimens with top lighting. You can put a insect or a slug in the containment dish with the lid on to look at, take magnified snapshots, or make short movies.

Adding light

One of the new features of the QX5™ microscope are the much brighter LED lights, but if you do need to supplement this light source then you may want to place a high-intensity desk lamp near the microscope to add to top lighting, particularly when using medium or high magnification.

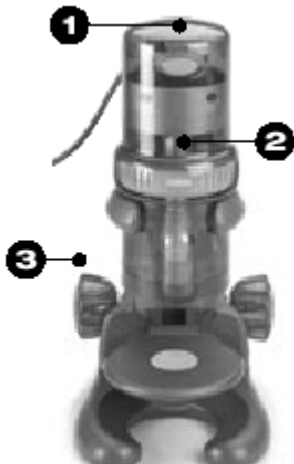
Recording your time lapse

Once you've set your time lapse, you click on the Record button to start it. This puts a Minimize button in the upper right corner of the screen. A display under the Record button shows the total time since you started the time lapse. The Settings control display now functions as a countdown timer to show you the length of time between snapshots.

The display below the countdown tracks the total number of snapshots taken.

See pages 18 and 19 for full details on how to use the Time Lapse feature.

QX5™ Controls



You can use the QX5™ controls to:

1. Capture still pictures or digital movies (in hand held mode)
2. Change magnification level
3. Focus

Capturing pictures and movies in handheld mode.



In handheld mode, click the Capture button to take a picture. Click and hold the button to capture a movie. If the Time Lapse controls are showing, you can make a time lapse video in handheld mode, but once you release the button on the microscope your time lapse will stop recording.

Changing magnification

Choose the magnification by rotating the ring on the microscope until the label for the desired level faces you. You will hear a click when the lens is in place. The levels are approximately 10x, 60x and 200X. In this quick start guide we refer to magnification as low, medium, or high. Think of sizes this way:

- Low shows an area like the head of a drawing pin.
- Medium shows a pin head.
- High shows an area the size of a pencil tip.

These magnification levels are approximate and have been measured using a 15 in. (38 cm.) monitor. Actual magnification will vary according to size of your monitor.

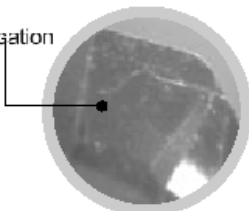
Focusing

Adjust the control knob until the image is clear. Focusing may take a little practice. On some computers, there may be a delay between your moving the knob and the image changing on the screen. Try making small adjustments and wait for the screen to catch up.

Hint

Use low magnification and top lighting to look at things you can't see through, like coins, hair or paper. Medium or high magnification may make the image too big. Or you may need extra light.

Crystal at high magnification



Collecting and viewing

Your QX5™ Computer Microscope comes with accessories to get you started.



1 x Tweezers to handle items such as insects, muddy objects or anything you wouldn't normally want to handle.



Sample specimen slide – see magnifying (next section) *[Matt] – this slide shot isn't very clear.*



2 x Sample Jars



2 x Containment dishes *[Matt] – this shot isn't very clear either.*



1 x Pipette



1 x Slide clip – use the slide clip to make sure your specimen stays in place on the microscope stage. .

Attach the slide clip to the microscope by placing the slide clip on top of the stage and snapping into place. Place your specimen slide on the stage and slide it underneath the clip arm to keep it still.



Magnifying

The QX5™ contains a sample slide to help you learn to use the controls on the Microscope. This slide contains four specimens; a plant louse, pheasant feather, a honeybee leg and a honeybee wing.

Live View Buttons



Snapshot button

Click this button to capture a picture of your sample. Clicking the Capture button on the microscope in handheld mode has the same effect.



Record button

Click this button to record a movie of your sample. Holding the Capture button on the microscope in handheld mode has the same effect.



Trash can button

Click this button to remove the last capture, shown in the preview window, from your collection.



Time lapse button

Click this button to see the time lapse controls.

Low magnification (10X)

At low magnification, you can watch a insect in the containment dish and see how it eats and behaves. And when you have finished watching and recording the insect, release it back where it was found.

Medium magnification (60X)

Here's a coin at medium magnification. Look at common coins with the microscope still on the stand to get a close up view. Paper money looks very different when you see it with your QX5™ microscope.



High magnification (200X)

Did you know that various hair colours and textures look different up close? There are lots of hair types:

- Brown, brunette, or auburn Curly
- Gray, silver, or white
- Red
- Processed or “permed”

See how many types of hair you can collect from your family and school friends. Using high magnification and bottom lighting look at the hairs with your microscope. You may be surprised by what you see.

TIP: Don't put your specimens directly on the microscope's sample platform. Use one of the containment dishes. If a sample won't fit in a containment dish, you can always look at it in handheld mode.

Using Handheld Mode

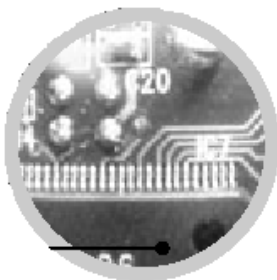
You can use the Digital Blue QX5™ Computer Microscope as a handheld magnifying glass.

Some of the things you can look at are your nose, toes, and teeth. Your feet. The hair on your arm. The moon on your fingernail. The scab on your knee. Your tummy button. Your fingerprints or your ear. Or, a flower.

Use low magnification in handheld mode. If your hand shakes too much at medium and high magnification, the sample won't stay in focus, and there may not be enough light to get a good picture.

Remember

- When using the microscope in handheld mode, don't pull on the cord that connects it to the Computer. Putting too much strain on the cord can lead to trouble.
- Whenever you're finished using the microscope in handheld mode put it back in its cradle.
- Always use the microscope so that you've got a clear view of your computer monitor—so that you can see what you're pointing at.



Telling your left from your right

In a normal microscope, images are reversed. The QX5™ microscope uses the software to flip the image so that when you move a slide on the sample platform to the right, the image on your monitor will also move to the right.

To have this software feature work correctly in handheld mode, remember these three things:

- Hold the microscope with the magnification number facing you.
- Moving the microscope to the right is the same as moving a slide on the sample platform to the left.
- Moving the microscope toward you is the same as moving a slide on the sample platform away from you.

Making Movies

Choosing your specimens

Your Digital Blue QX5™ Computer Microscope came with two containment dishes. What can you put in them? Well, if you've got an aquarium, how about fish food? Live fish food. You can view and take movies of tubifex worms and brine shrimp, which are examples of live fish foods.

And, how about some of that green stuff growing on the glass? It's called algae and is a simple plant.

Even if you don't have fish to feed, you can grow brine shrimp just for fun. Or you can buy some at a pet shop.



Once you've got some living brine shrimp, use your eyedropper to suck up a few of the tiny shrimp and put them into a containment dish to watch and record them. Use low magnification with bottom light.

It's important to prepare your sample in another room, away from the computer. Bring the sample to the microscope after it's ready. This prevents accidents that could damage the microscope or your computer.

Magnification

The size of your specimen is important. To get the most out of your QX5™ microscope remember this simple guide:

- At low magnification, you're seeing an area about the size of a drawing pin or a pencil rubber.

-
- At medium magnification, you're looking at the head of a pin.
 - At high magnification, you're viewing an area the size of a pencil tip.

It takes a lot of patience and a little good luck to capture a good image of something that's moving around.

The higher the magnification, the more light you need to see clearly and the more careful you'll have to be when focusing and moving your specimen.

This fly eye was captured at medium magnification with top light with brightness set all the way to the top.



Recording indicator



When you're capturing a movie, the bar in the Recording indicator fills up to show progress, and a counter under the Record button shows how long you have been recording. You can stop recording by clicking the Stop button.

Recording will stop automatically when the status bar is full or there is no more available disk space.

Movie playback controls



Once you've captured a movie, the Recording indicator changes into Playback controls. You preview your movie in the small window by clicking the arrow on the left side of the control. Clicking the forward or backward arrows on the right side. You can move through your movie one frame at a time by movie in a bigger window, go to Main and use the Playback controls.

Making time lapse movies



You set up a time lapse in Live View. When you click the Time-Lapse button, a panel opens on the bottom right side of the screen.

Time-lapse controls

The slider controls the rate at which snapshots are taken during time-lapse experiments. As you move the slider from left to right, you can see the rate change in the display under the slider. You can set it from one picture every second to one picture every hour.

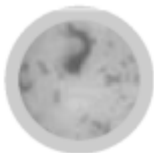
Once you've set your time-lapse, you click on the Record button to start it.





- A display under the Record button shows the total time since you started the time lapse.
- The Settings control display now functions as a countdown timer to show you the length of time between snapshots.
- The display below the countdown tracks the total number of snapshots taken.

Example of an overnight time lapse of water from a garden pond:



2 hours
Condensation clouds the top cover.



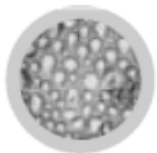
4 hours
Droplets start to form, but we could still see the critters in the background.



6 hours
Large droplets make a pretty and interesting pattern on the screen.



8 hours
The water drops continue to grow larger and the midges cavort!



10 hours
A sparkling water world takes shape with shadowy blobs behind it.



12 hours
Eventually the screen looks like giant glistening blisters!

Doing this yourself

1. While you're outside, look for standing water with little creatures swimming and twitching in it.
2. Put some in your sample jar or other small container.
3. Before going to your computer, put some of the water in a containment dish.
4. Carefully place the uncovered containment dish on the sample platform.
5. Set the magnification to low.
6. Select bottom lighting
7. Focus on the smallest creature you can see.
8. Adjust the brightness until the image is as clear and bright as possible.
9. To make the time-lapse movie, click the Time Lapse button.
10. Set the timer to take one snapshot every 30 seconds. Then click Record.
11. Set the timer to take one snapshot every 30 seconds. Then click Record.
12. Let it run overnight
13. To end the time lapse, click on the stop button.

TIP

When you're making time-lapse movies of things in water, prevent condensation by leaving the lid off the containment dish. This way you can actually see the creatures moving around.

Other good subjects

Mix some yeast, sugar and water and put a few drops in the containment dish.

- A slug or snail. Keep the lid on!
- A piece of mouldy bread.
- A ripe strawberry or other piece of rotten fruit.
- A sprouting seed.
- A worm.

Making the best of your time

If you do a time-lapse movie that will record while you're not at the computer, make sure nobody shuts off the computer

Use the Paint tools available in the Main screen to make a warning sign. Print your warning sign and hang it on your monitor.

The Main Screen

Now that you've gathered your specimens and captured pictures and movies, let's explore Main to find out what else you can do with things you've found in the microscopic world.

From Main you can:

- View the pictures and movies in your collection.
- Go to the Paint screen.
- Go to the Special Effects screen. Go to the Show screen.
- Go to the Print screen.
- Return to Live View.
- Import pictures.
- Export pictures and movies.
- Delete pictures and movies from your collection.
- Quit the software.

Main Screen Buttons



Paint button

Goes to Paint where you can modify your pictures with cool tools.



Special Effects button

Takes you to a screen where you can give special effects to pictures and movies



Show button

Opens one of the software's most popular features where you can assemble slide shows with music!

**Print button**

Print your pictures on a single page, on four pages to make a poster, or on stickers.

**Collection button**

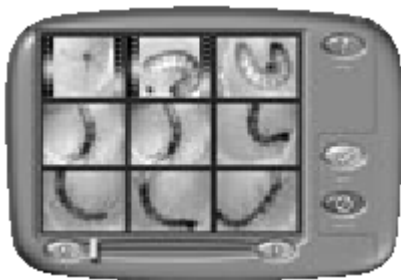
View your collection and choose a picture or movie to look at or use in one of the main activity screens. See “collection window” below.

**Recycle Bin button**

Delete pictures and movies you no longer want. You can change your mind by clicking the Cancel button.

Collection window

Look through the pictures and movies in your collection, nine at a time, by using the forward and back arrows. Movies have filmstrip borders.



Once you have chosen something to work on, click OK to return to Main. You'll see your selection in the viewing area. From Main you can:

- Go to Paint, Special Effects, Show or Print with your picture.
- Go to Special Effects or Show with your picture or movie.

Measuring tool

The QX5 features a measuring tool that allows you to approximate distances between points on your specimen.

Within the live view a vertical and horizontal measurement guide will appear on two side of the your live image.

To measure the distance between two points carefully place the specimen on the microscope stage. Move the object that you wish to measure so that one end appears at the bottom left hand corner of the live view screen. You can use the measurement guides to get an approximate size of your specimen.

The units of measurement change depending on which level of magnification that you use.

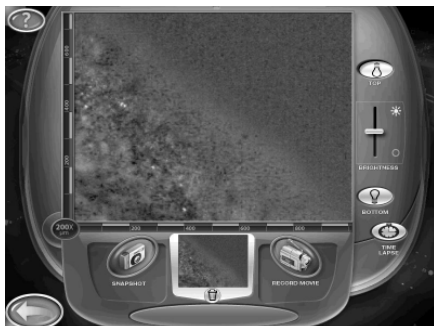
- For low (10X) magnification measurements are displayed in centimetres.
- For medium (60X) magnification measurements are displayed in millimetres.
- For high (200X) magnification measurements are displayed in micrometers (one millionth of a metre)



Coffee granules at 10X magnification with measuring guides



Coffee granules at 60X magnification with measuring guides



Coffee granules at 200X magnification with measuring guides

Paint tools



Paint lets you change pictures in your collection using fun tools. On Main, click the Paint button. This brings you to the Paint screen.



What is a selection?

A selection is the portion of a picture you are working with. If you don't use the Selection tool to pick an area of the picture, the entire picture is selected.

Paint tools

Use Paint tools to change your picture. Click on a tool and its options appear on the right side of the screen.



Scissors

Select portions of your picture to work on.



Paint Brush

Control transparency, colour, shape and size of Brush Tip.



Paint Bucket

Fill areas with colours and patterns. You can control whether the fill is solid or see through.



Eyedropper

Grab a colour from anywhere on your picture or the Colour Palette to make it your current Colour.



Text

Choose the size and style BEFORE you type your text. Then click the OK button and move your text around your picture. When you use the Text tool, you can modify your words using the Paint Brush, Stamp tool, or Eraser tools.

Eraser

The Eraser has four options:



- Erase to Original,
- Erase Area To Original,
- Erase to White and
- Erase Area to White.



Stamp

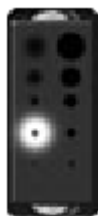
Choose from stamp sets on the Stamp Palette. Click once on your picture to place a single random stamp from the chosen set. Click and hold while moving the mouse to spray the stamps everywhere.

Palettes, options and other controls.



Scissors Palette

Select parts of your picture with the rectangle or free-form Lasso. When you've made your selection, other tools work only inside that area. To work somewhere else, make a new selection. To work on the whole picture, click the De-select button.



Brush Tips

Click a Brush Tip shape to use it with your chosen colour and pattern. Click on the up and down arrows to see more shapes and sizes. These tips can also be used with two of the erasers.



Colour Palette

Click anywhere on one of the colour bars. Your selection is shown in the Tool Preview. You can only choose a colour or a pattern, not both. Choose colours from this palette with the Eyedropper too.



Patterns

Click a pattern to use it. Click on the up and down arrows to see more patterns. Use the Transparency control to give your patterns unusual effects.



Tool Preview

This box appears when you choose any tool, except Scissors or Eraser. It shows the current Colour, Pattern, or Stamp set and how solid each is. The clearer the checkerboard shows, the more see through your tool will be.



Transparency Control

Use this slider to adjust how solid or see-through your tool will be. You can also use this control with Text and one of the Eraser options.



Stamp Palette

Click the up and down arrows to see all the stamps you can use. Use the Transparency slider with stamps to change how see-through they are. You can even fill your words with stamps.



Picture Controls

The Flip, Rotate, and Scale controls work on your current selection. Click Flip to turn your selection left to right. Move the green knob around the circle to rotate your selection. Slide the green knob on the Scale tool to make your selection bigger or smaller. If you don't have a special area selected, these tools work on your whole picture.



Put your friends head on a lady bird

1. To begin, you need your friend's head. From Main, click the Collection button and find a picture of your friend. If you don't have her picture use handheld mode to capture a photograph. Use low magnification.

2. Now that her head is in the large viewing area in Main, click the Paint button.

3. Use Scissors with the freeform Lasso to select your friend's face. Click the Copy button and the face will appear in the current selection window.

4. Go to Main and click the Collection button.

Scroll until you find a ladybird or other bug you like. Select it and click the OK button.

5. Go to Paint. Click the Paste button and use the mouse to move the face just where you want it.

Adding Special Effects



You can add cool special effects to pictures and movies.

On Main View, click Special Effects.

This takes you to a screen where you can give special effects to pictures and movies.

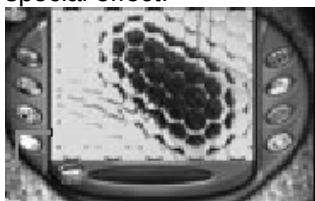
Special effects change the way your picture or movie looks.

Here are some pictures and movie frames with special effects applied.

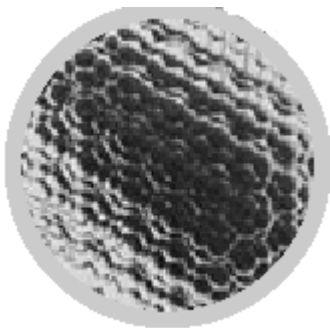
Frunobulax, the make-believe fly Frunobulax, the fly that walks on two legs, is pretty interesting...



...but it looks even more interesting when you apply the Fly's Eye special effect.



And here's the same effect applied once again to the same picture.



Other special effects

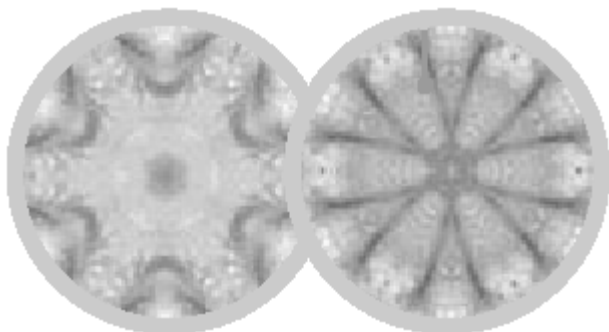
There are six other effects, including Distort, Atomic Glow, and Kaleidoscope. An eighth button randomly applies two of the effects to your picture or movie.

Special Effects progress bar



It takes time to apply a special effect to a movie. When the first frame is finished, a Progress Bar and Cancel button appear. If you don't want to wait, you can cancel running the effect.

Brine shrimp look good by themselves but you can make them even better with the Kaleidoscope special effect. Here are two frames from our Kaleidoscopic brine shrimp movie.



Remember you can hear what each special effect does by using Audio Help.



Making a slide show

One of the really fun things you can do with the Digital Blue QX5™ Computer Microscope is to make slide shows friends, teachers and family.

On Main View, click the Show button.



This brings you to the Show screen.



The viewing area shows the first slide in the current show. You can have four different shows. A black window means you have opened a show with no slides in it yet. The Play Show button is also greyed if there are no slides in your current show.

Each slide show can include any combination of up to 50 pictures and movies. You can even add music to your shows!

Create show



Click here to bring up the Show Editing window.

The four tabs on the right side, above the filmstrip, represent your four slide shows. Using the show editing window This window acts like the Collection

window. You look through your collection, nine samples at a time, by clicking on the forward and back arrows on the left side of the window.



- On the right side is a film strip with three slides from the current show. The blank green slide is always the beginning of the show, and the red slide is always the end of the show. This show is currently empty.
- The Add button places your selection in the middle and shifts the current slide up.
- The Remove button always cuts the middle slide and shifts the slide from above down.
- The Cancel button returns you to the Show screen without saving any changes you made to the current show.
- The OK button saves your changes and returns you to Show with the first slide in the viewing area.



Tips to making your own slide show

Getting ready to begin

It's good to have a plan before putting a slide show together. Plan what you want to show, and the order you want to show it in. As you put your show together, list the pictures, movies and text you think you need but don't have in your collection. You can either make them first or add them later.

Once you've got a plan, click the Create Show button and choose one of the tabs. If you don't have a blank tab, pick a show you want to get rid of. Click the Clear All button to empty the slides out of this show. You will see a warning, so you can change your mind.

Once you have a blank show, search through your collection and add the pictures and movies you want in your new show.

If you don't like the order of your slides, you can:

- Start again with a blank show.
- Use the Add and Remove buttons to rearrange your slides.

Making a show: key steps

- Search your collection by clicking the forward and back arrows below the Collection window.
- Add a slide by clicking the Add button.

-
- Remove a slide by moving it to the middle of the filmstrip and clicking the Remove button.
 - Look through the slides in your show by using the up and down arrows.
 - Click the Cancel button to leave the slide show the way it was.
 - Click the OK button to return to the Slide Show window with your changes.
 - Click the Clear button to completely erase the currently selected slide show.



Adding music

There are five kinds of music you can play while watching your show. To add or change music:

Click the buttons to hear short examples of the music.

The last button you click before starting your show picks the music that will play with your show. To change the music during your show, just click another button. If you don't want any music, click the No Music button. It is the top button, and turns off all music.

Running your show

Once you are satisfied with your show, click the OK button. You'll see the Show screen with your first slide showing.

Click the Play Show button and your show will start with the first picture or movie and play over and over until you click the Pause Show button.



Printing

You can print out the pictures you create in a number of ways! Make a poster, create stickers, or share your artwork with friends and family.

On Main, click the Print button.



This takes you to the Print screen.

Printing options

The Print screen displays a preview of three ways to print your picture. Click the button under the upper left display to print a single page.

You can print a four-page poster by clicking the button below the biggest display. You can tape the pages together and hang them on your door.

To print a sheet of nine stickers, use special sticker paper and click the button below the display in the lower left corner of the screen.

Fun printing ideas

Here are some suggestions for how to use your printer to have even more fun with the pictures you create.

- Make your own custom badges and tee-shirts by using special paper in your printer.
- You can make iron-on shoulder patches using the sticker format.
- Take your print-outs and cut them up to make collages by pasting them onto cardboard.
- Use the poster option to create wrapping paper or book covers.
- Print a picture to use in *découpage*, a craft that uses paper cutouts to decorate all kinds of surfaces.



Contacting Technical Support:

If you require further assistance in using your QX5™ Computer Microscope, try visiting TAG Learning's web site, www.taglearning.com, which contains a number of useful resources for using the QX5, including a full list of Frequently Asked Questions.

Alternatively, please feel free to contact our technical support team either by e-mail to support@taglearning.com, or by phone on 01474-537886 ext 227 (Monday – Friday 9am – 5pm GMT).